● 249

Paez SC15

[For descriptive information on the Paez sugar-cane processing mill, see category 407.]

In one case, however, in the house of
/115 cont./
596 Ezequiel Calliumbo, there were three married sons, besides three unmarried ones, all of whom cultivate the fields together. Ezequiel, who is about 60 years old, had ten children, of whom six sons are still living. The oldest son has three children, two of whom have died, the second eldest has four children, two of whom have died, and both the children of the third eldest are dead.

342 The normal houses (yat) are rectangular houses with a hip roof and, depending on their size, are divided into "large houses" (hatwála) and "small houses" (yatléčkwe) (Ills. 158 and 159 /see pp. 270 and 271/). In accordance with its use the dwelling house specifically is called ōpyat (ōp = to live). The dimensions of the small houses vary between five to ten meters in length and
[345] three to five meters in width. The largest houses are up to 15 meters long and seven meters wide. These are primarily the
342 festival houses. As dwellings they differ from the small ones,
409 which represent by far the greatest proportion of all houses, not
• 249 only by their /116/ size, but above all by the fact that they have
352 the sugar mill (lapíče) /"Trapiche" (Sp.) in the glossary, p. 250/, which is a feature of every house, in their interior. As a rule it stands in front of the house or a little to one side of it, normally covered with quantities of expressed sugar-cane stalks hung over it
343 to dry. Besides the sugar mill, a small menstruation hut (dúyat)
342 is required for any house to be complete; it may be absent only if the family erects a small field-hut (ēyatwá) in the middle of the field for a harvest period. In this case the women of the family living there go into the dúyat of another house. In no case may they remain in the dwelling during this period. The field hut and
[341] the small menstruation-hut are rectangular gable-roof houses in construction and, with the exception of the gable roof, of the same construction as the normal hip-roofed houses.

342 Every house has an annex (škídnyeyát) or at least a com-
273 partment for storing the chicha trough (kánoe). This trough is the
251 most important accessory of a Paez house, next to the sugar mill (Ill. 165 /see p. 273/).

/118 cont./

342 and begin to chew coca and tobacco and to drink brandy to-
761 gether. After a while the shaman ascertains through signs in
789 his arms or legs whether bones of the Pijao are in the ground.
756 If this is not the case, the building may be started; otherwise
787 the man must look for another building site. After the building
is finished, a further ceremony is performed (see under "Religion"
342 /see p. 205/), and then the same shaman fastens special herbs
756 to the roof to prevent the ečˇ or gélyómp spirit, hostile to man,
789 from entering the house from there.

Houses are built only by men, by fathers of families.
342 One man alone, however, is not in a position to do this. At
476 least in the erection of the house posts he is helped by his brothers,
[462] as well as by other men and friends who have nothing else to
do anyway on these days and receive chicha and something to
342 eat for their assistance. The building material costs nothing,
273 to be sure, but the builder must furnish a substantial amount of
476 chicha, for which planning must be begun in plenty of time, two
or three years beforehand, by the planting of sufficient sugar
cane. This is the task of the married son who is still living in
[594] his father's house this long. To make the chicha he also still
● [249] needs the sugar mill of his father, upon whose consent and help,
therefore, much depends. According to the amount of chicha
[461] that is available, the building of the house thus lasts two to six
months, depending on whether only five or 15 men participate.

342 The most important thing in the construction of the house
335 is the erection of the wooden frame (Ills. 161 to 164 /see p.272 /),
[476] which always requires several men who bring in the trees, which
are superficially smoothed with the machete, but not freed of
bark. The master of the house is able to make the walls by
[462] himself in an emergency. The covering of the roof, too, like the
entire house construction, is men's work, but the woman of the
house may hand up the sugar-cane leaves for the roofing. First
the vertical corner and side posts of the outer walls (yátsˇínda) are
erected, then the outer beams lying horizontally on the side
posts to support the roof (yátpopānt) are laid on, and, as the third
step in the work, the horizontal crossbeams (bīkas) are fastened at

/119 cont./

574 would ever enter a house whose occupants were not present. We
576 never succeeded in persuading Victoriano to enter an empty house, although he knew that we were always greatly interested in learning about the interior of houses and their furnishings.

342 The door of the house is only in rare cases a wide board which at the top and bottom on one side runs out into two pegs which turn in a socket, one in the threshold and one in the door-frame. The entrance is generally constructed in the same fashion as the wall (ĩnd), which /120/ consists of vertical maize stalks placed next to one another as closely as possible and lashed by means of bast or a liana to one another and to two horizontal maize stalks. The latter always reach from side post to side post. At the place for the door, the rigid wall is interrupted, and the vertically placed maize stalks, only loosely bound with bast, may be shoved a little to one side, whereby they drag along the ground (Ill. 158 /see p. 270/).

[231] Dogs, cats, and chickens are kept in the houses, but not pigs, which live out of doors all the time, exactly like the cows, horses, and sheep.

c) Household Implements

Generally the house has only one division into two rooms, the smaller of which is the kitchen, living room, and bedroom, the larger serving as storage and supply room. The wall between these two rooms is likewise only made out of maize stalks set
● [249] next to one another vertically. In the "large" houses the larger
[404] part contains the sugar mill, by means of which undiluted sugar-
596 cane juice may be produced, even in rainy weather. In case
342 adult married sons live in their father's house, a separate compartment divided off in the same manner is built for these families and furnished as a kitchen, either next to the living room of the parents or -- as in most cases -- on the other side of the
354 house. The hearth area is the family center, and every married
596 woman, in case she is living as a daughter-in-law in the house of the father-in-law, has her own hearth area. The latter has

the simplest possible form

/121 cont./

372 In case the fire should go out, which happens very rarely, the men, if they have no matches, know how to make fire by striking the blade of the iron machete with a stone and catching the sparks in the dry tinder of expressed sugar-cane. To fan this or a dying fire the hat is used as a fire fan, instead of a special fan. A few times I also saw a reed tube (yotá) about 50 centimeters long, which is blown into with the mouth and which thus acts like a bellows.

352 [854] [513] [286] Infants do not as a rule sleep on the floor, but in hammocks (máka), which, however, as the name indicates, were not originally Paez. Nevertheless all the men know how to make them out of agave fibers, which is done with the same knotting technique as in the manufacture of nets for bird hunting.

415 [286] [353] [273] Moreover, a few bags (yáha) made of agave fibers, which contain beans, maize, or other supplies, hang on the wall posts. Arracacha lies on the floor. For drinking chicha, which is allowed to ferment in large, hollowed-out tree troughs, calabashes (tóka) are used, but they are plain and undecorated. Cracked calabashes are sewed with a waxed agave thread (Fig. 25 /see p253/). The calabash gourd is grown in the house garden /122/ of every family; its meat is inedible. Furthermore, an oval or rectangular grindstone on which maize is ground with a smaller hand-stone is found in every household. It usually lies on the floor in a corner of the house, but sometimes it is set about one meter high on two forked posts.

[249] 412 352

412 415 264 [322] [177] Meals are taken with wooden spoons (todšá'tc) off of wooden plates (bič), which are carved by the Paez themselves (Fig. 27 /see p. 253/). Aluminum or enamel bowls were rarely encountered in Calderas. Plates and mugs of aluminum were therefore always coveted gift articles, along with kitchen knives, needles, safety pins, matches, and salt.

356 515 Cleanliness within the house is surprisingly great, considering that the Paez wash their bodies but seldom and their hands only when they are "very dirty." This is the case when a person has been working in a burned field and has cleared away the sooty, burned tree trunks and the burned underbrush. The house

000 /129 cont./
351 p.274 /). The same fencing with the same ladder construction
417 generally also surrounds the house gardens of the Paez farms.
In case the houseowner has larger domestic animals, such as cows, horses, and sheep, a gate (puélta) consisting either of a regular lath door or a barrier of horizontal beams is built into
[224] the fence surrounding his house. In the villages of the civilized Paez, in the /130/ environs of which tree growth is inadequate for the construction of a wooden fence, bamboo is used for the vertical poles, and bundles of dry maize stalks for the horizontal parts.

241 The entire agriculture of the Paez is digging-stick culti-
412 vation (Ill. 172 /see p. 276/). Hoe culture was originally unknown. The house gardens, only recently laid out after the model of the colonists and in which European plants such as cabbage, cucumbers, and onions are cultivated, are turned over with the spade (pā́la). The digging stick (ā̃ty) consists merely of a pointed tree-trunk or pole, though recently broad iron tips with
243 a socket are being put on the digging sticks more and more. Maize may be sowed throughout the year, but it is generally sowed in April when the rainy season begins. Several men always participate, making holes in the ground about one meter apart in every direction with the digging stick, and putting six to eight maize kernels into each hole. The holes are covered again with only very little earth with the foot, "so that the sprout can come out more easily." The ripening period of ten to 12 months is relatively long. After half a year the field is cleared of weeds once. The harvest period is spread out over approximately half a year, provided that sufficiently large amounts of maize were planted; and for this half
[262] year the people practically live "from the stalk." First the young maize (tsót; maize in general, kóty) is eaten half-ripe and only later are the ripe ears harvested and eaten. Every day the men or women go into the field with their bags made of agave fibers and break off only as much as is needed each time for the meal.

● 249 Whereas maize may be cultivated at all elevations in
[243] Calderas, sugar cane (nyúša) thrives only in the lower, protected localities of the Kokiyó Valley. Its ripening period of two to

/130 cont./

249 three years is very long. Shoots from old sugar-cane plants are used as slips, which are set out by the men in the same way as the maize kernels. A hole is made in the ground with the digging stick at one-meter intervals in every direction from the neighboring plant; the slip is stuck into it and pressed firmly with [462] the hands. The cane is harvested by men or women. Both know [482] how to handle the machete. The men carry the sugar cane home over their shoulders (Ill. 173 /see p.277 /), women stuff the sugar cane into the fiber bags and hang them over their backs, holding the carrying band with their foreheads.

244 Besides maize and sugar cane, the bean (õs) is of great im- [262] portance for the Paez diet. There are the large, speckled so-called "sow beans" /broad beans/ (Spanish frijol) and the smaller, white beans. /131/ The former are for the most part eaten, whereas the white beans are usually sold. They are sowed either in the vicinity of the house at the foot of trees and shrubs, with three beans always stuck into the ground at a time, or together with maize. In this case, during the maize sowing, three to four beans are put in the same hole with the six to eight maize kernels. In growing simultaneously the beans climb up the maize stalks.

243 Wheat (skótc) is not of importance in the diet of the Paez, [262] for no bread is baked. Nevertheless it is very often planted because it grows fast and thus represents a suitable item for the Paez to sell. 243 If anyone has to buy something, be it fabric for a pair of trousers, 434 a machete, a metal pot, etc., he sows wheat, usually in March/ April, and after half a year he can already pocket profit from the sale. It is characteristic of the Paez, however, that they make use of this only when they need something urgently, but not in 243 advance so as to have money on hand in any case. The preparation for wheat sowing is done in the customary manner of clearing by burning. The sower hangs around himself a fiber bag containing the seed grain and, in exactly the same fashion as our sower, starts to broadcast the wheat with his hand in a wide arc. Subsequently the ground is superficially turned over with the shovel, so that the birds cannot pick up the grains. In harvesting it a bundle of stalks is grasped a good hand's breadth under the ears and cut off with the

P
C /134 cont./
276 by the "Ministerio de Trabajo, Higiene y Prevesion Social."
C This prohibition was extended by Decree No. 578 of 1941 by the
656 same ministry, according to which an exact list of the existing coca plants of the country was demanded and their destruction ordered, /135/ with a simultaneous prohibition against new plantings (Duque, 1945, pp. 445 f.). Of course this prohibition against coca planting cannot be strictly supervised and enforced in all the remote parts of the country.

P The argument for the use of coca has remained the same
276 from the time of the Conquista to this day: it is supposed to
461 drive away hunger and to give strength. "Without coca one cannot work," I was told over and over again when I asked the Paez the reason for chewing coca. And, as a matter of fact, one sees the Paez chewing it on the long trips to market and during every physical task; but only at work, when one needs strength, and not during festivals and celebrations or on festive days. (The shamans are an exception, see below.)

P The bitter tasting coca is chewed by both sexes, and the
276 boys begin at 12-14 years of age, when they also begin helping
P their father with the work in the fields. The girls generally begin
[887] somewhat later, and in old age both sexes chew quite heavily and more frequently than is normal in younger years. The men take coca three times a day as a normal dose, and each dose lasts about two to three hours. Nothing is eaten all day after taking the first meal early in the morning before work; the second one
P is not eaten until after they return home from the fields in the
[272] late afternoon. During the pauses for coca, unfermented sugarcane juice (nyũ̃ayumfl) is drunk, everyone carrying a calabash with one to two liters of it with him.

P The coca shrub, about 80 to 200 centimeters high, is
276 striking even at a distance because of its fresh, light green,
249 lancet-shaped leaves, which have two slightly curved longitudinal
[137] lines on the underside. Among the Paez of Calderas almost every family has its coca shrubs, the leaves of which, after plant-
P ing, are harvested from the first year for about 20 years. Anyone
[431] who does not own coca shrubs himself trades for the leaves in

P /135 cont./
276 exchange for brandy, wheat, or maize (for exchange and barter
249 rates, see "Trade" /see pp. 92-94 /). Within the family each
437 one harvests for himself as many leaves as he happens to need; otherwise the father of the family usually barters for the entire family. Harvest time is throughout the year (Ill. 174 /see p. 277 /).

P 276 276 317 [415] Before use the leaves are roasted in a clay bowl and then carried around in the colored wool pouch (kwatandyáha), together with a small calabash containing lime. The lime (kwatánd) is obtained from limestone (kwatandkwát) which crops out at various places throughout the region and which men and women look for as it is needed, or the husband sends his wife to fetch a few stones. These pieces of limestone are put in a vigorously fanned fire for two hours, /136/ then in a clay bowl, and cold water is P poured over them. After that the cracked stone is pounded to 276 powder. To enjoy it, one takes a handful of leaves out of his pouch and puts them in the mouth and chews them for a while, until the lime can be added. Care must be taken that neither the tongue nor lips come in contact with the lime. Beginners press the coca mash flat against their tongues with their gums and sprinkle a pinch of lime from the pear-shaped, absolutely unadorned calabash (kwatandóka) upon it; practiced coca-chewers take a pinch of lime on the back of the hand between thumb and index finger and toss it into the open mouth with a flourish. The green saliva copiously produced is partly spat out, but most of P it is swallowed. In the case of old people it often runs out of the C mouth and drips on the clothing (Ill. 179 /see p. 280 /).

276 According to my experiences among the Paez and the P C coca-chewing Colombian workers, the harmful effect of coca seems to be exaggerated in most of the studies on the subject. 276 146 273 Of interest, however, are the data of C. Gutiérrez Noriega (1952), who investigates the psychological and physiological effect of taking coca, especially among the Peruvian Indios. There, in the region of the greatest coca consumption, two to four kilograms per person and year, the daily amount of food for a worker is only about 2,000 calories per day. With a simultaneous drinking of brandy and an inadequate diet, physical and mental consequences

P
C
/136 cont./
276 are naturally more in evidence than in the case of the use of
146 coca with good nutrition and as the only indulgence. Along
273 with improved nutrition and corresponding enlightenment, a
prohibition on brandy instead of its propagation would be more
C desirable for the health of the people than a prohibition on coca.
[651] The departments, however, draw their chief income from the
P brandy tax, whereas coca was always tax-free.

276 Tobacco (wáhi) is neither planted by the Paez nor con-
●[249] sumed in large amounts, since there is generally no money
available for the purchase of tobacco or cigarettes. Both sexes,
P however, smoke gift cigarettes, and, to be sure, from child-
[756] hood, that is, from two to three years of age. The shamans
[755] in their séances and ceremonies are in the habit of chewing
cigarette tobacco along with coca, but it is always purchased.
These séances last many hours or throughout the night, during
which shamans and patients together chew this mixture uninter-
ruptedly.

P
273 Chicha (pronounced tschitscha) is one of the alcoholic
[171] beverages which, made out of various raw materials, are wide-
spread among the natives /137/ throughout South America, with
manioc chicha predominating in the forest region (Venezuela,
Brazil) and maize chicha in the Andean region (Cooper, pp.
539 f. and Map 11). Two methods of production are distin-
guished, according to whether it is a matter of raw materials
with a high sugar content (honey, sugar cane, palm sap, pine-
apple) or more starchy crops (manioc, maize). The former ferment
without the addition of saliva and need not be chewed in the
preparation; the latter need human saliva before or after cook-
P ing in order to ferment.

[137] Among the Paez chicha (mbéca) is made only from the
juice of sugar cane, a raw material that is not American, but
came from southern Asia and did not come to America until the
post-Columbian period (Maurizio, 1933, p. 75). Formerly
chicha was made out of maize, as it still is today among the
neighbors of the Paez living in higher regions (for example, the
Guambiano). The name for sugar-cane juice, nyúšayumfl

/137 cont./

273 (= sweet water), as for the unfermented chicha, does not in any case have anything in common with the name for fermented chicha. Moreover, there is no separate name for sugar cane; nyúša also means "sweet" and "honey."

• 249 In the region of the Paez, sugar cane may be planted and harvested throughout the year. The juice of the cane is pressed [407] out in the sugar mill (lapíce). The latter stands in front of or inside every house; it belongs to every family in the same way [273] that each has its sugar-cane field and its chicha. The latter has [431] no commercial value whatever, but is merely given away, and 249 anyone who asks for it gets it. The sugar mill (Fig. 28 /see 407 p254 /) of the Paez of Calderas and southern Tierradentro consists of two tree trunks smoothed off on either side, which form the lateral posts (mágrena) of the mill. They are rammed into the ground and are provided, each one twice, with two recesses that receive the horizontal guidebeams (sépo) for the three crushing cylinders. These guidebeams are merely pinned. No metal parts or nails of any kind are used here or in the entire construction. Below the two lower guidebeams a strong plank is fastened to the lateral posts, upon which the three cylinders (ũnk) rest. Of these only the center one is turned by means of a crossbar, with human power or by a horse, whereas the two lateral ones are moved by means of pegs, which are most accurately fitted, but are not in addition pinned. A horizontal pole is lashed above each of the two lower cylinder-guidebeams, in order to guide the sugar cane shoved in for pressing. Below the cylinders lies a rectangular board (tablón) with /138/ two longitudinal grooves, [492] in which the extracted sugar-cane juice runs out at the side. If a horse is used to move the crushing cylinders, it is hitched up with two ropes leading out from a rope tied around the belly of the horse, so that the horse does not pull with its chest, as is customary among us.

H. Pittier de Fábrega illustrates (Pl. VI/2) another type of sugar mill from northern Tierradentro, which shows only two horizontal cylinders, one above the other. Both are clamped with pegs between two vertical posts and are turned on either side by hand. The extracted juice is caught in a pouch hanging underneath.

/138 cont./

249 407 461 273 In chicha production for festive days it is customary for the mill to be turned only by human power, by men or women. One could generally observe that the slightly intoxicated men exerted themselves only a short time in each case and were then relieved by the more sober acting women, who -- with their children on their backs -- showed remarkable endurance at this physically quite hard work.

407 335 [412] Almost every father of a family and houseowner makes his sugar mill himself, or a neighbor helps. There are no professional carpenters. With an ax (swéla) and a foxtail saw (serúčo) the cylinders are sawed from a tree trunk and crudely smoothed. The cylinders thus prepared are provided with a small hole in the center, from the base and upper side, and are clamped horizontally, by means of pegs, between two posts rammed into [413] the ground and held together with a rope. Then with a gauge (regla), which consists of a board with thorns, the distances between the pegs are precisely incised on the revolving drum.

273 [249] [516] [415] The sugar cane is put through the crushing cylinders several times by the workers, one squatting on either side, until the juice, which is caught in a wooden tub or in calabash vessels, is pressed out (Ill. 175 /see p. 278/). It is first vigorously heated and then put in a large horizontally positioned tree-trough (kánoa) up to five meters long, in which there must always be a little chicha to begin with (Ill. 165 /see p. 273/). It is stirred up with the old chicha in the trough, the kánoa is covered with banana leaves, and already the next morning the chicha is ready to be drunk. As time goes on the chicha becomes ever stronger in alcoholic content. By noon of the same day it is already strong enough to distill brandy from it. If one does not do this, /139/ some water must be added the next day to dilute it. If this is not done, the chicha is neither drunk nor is new sugar-cane juice added, whereupon it becomes sour and bitter after four or five days and strongly sears the throat. There are also "gourmets" among the Paez, however, who let the chicha go on fermenting, untouched, for up to three weeks and only then drink it so sharp and sour.

1: Nachtigall--254 E-5 (1952-1953) 1955 SC15 Paez SC15

• 249
407

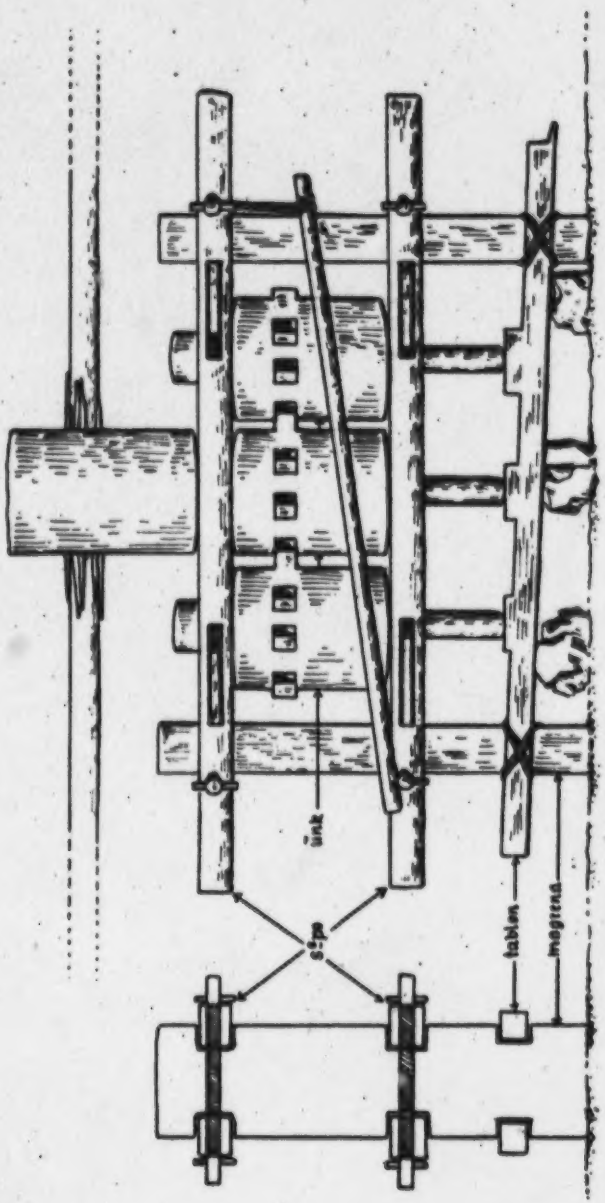


Fig. 28. Sugar mill.

1: Nachtigall--276 E-5 (1952-1953) 1955 SC15 Paez SC15

Ill. 171. Burning the felled trees.

Ill. 172. Setting out the sugar-cane shoots with the digging stick.

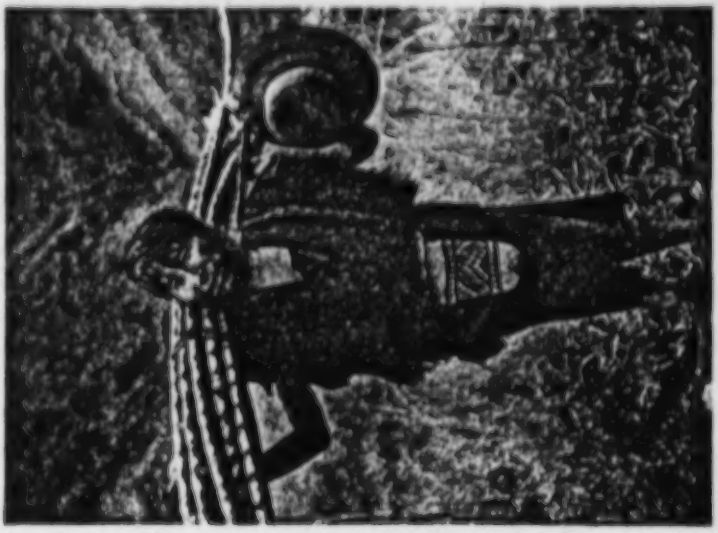
1: Nachtigall--277 E-5 (1952-1953) 1955 SC15 Paez SC15

XC

249
276

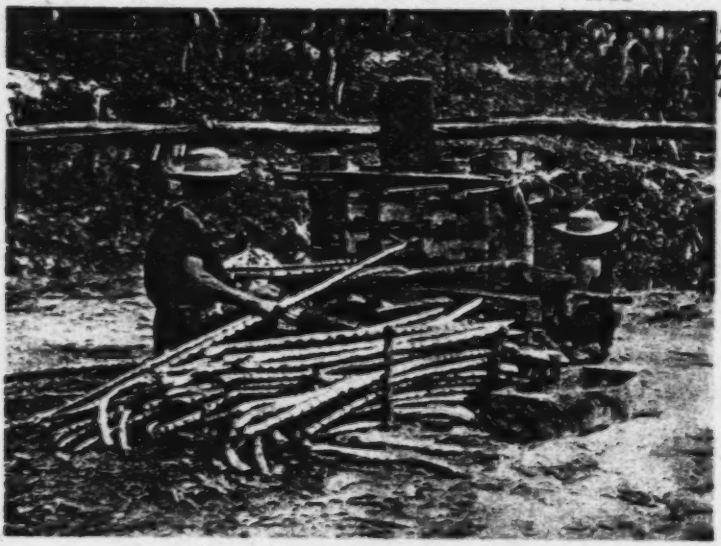
Ill. 174. Harvesting the coca leaves.

482
249
142
291
302
415



Ill. 173. Paez with sugar cane.

1: Nachtigall--278 E-5 (1952-1953) 1955 SC15 Paez SC15



249
407

Ill. 175. Sugar mill in operation.

273
415
516
291

Ill. 176. Distillation apparatus.

2: Pittier de Fábrega E-4, 5 (1906) 1907
SC15 Paez SC15

244 262 now widely used all over Spanish America, is of Kitšua origin (*zapayú*); *ápe-te*, the most extensively cultivated variety, is called *Méjicano* by the Spanish natives, although it seems to have been cultivated in the country from time immemorial.

Several interesting edible roots or tubers, mostly under cultivation, are relished by the Paez Indians. Thus *ãs*, or *ans* (*Arracaccia esculenta*), a celery-like umbelliferous plant with large white roots; *unt*, a peculiar yam (*Dioscorea*); *uia* the cassava root; *káka*, the potato, of which there are certainly several species; *tsẹvi*, or *ẓuil* (*Ullucus tuberosus*), a very remarkable *Chenopodiacea*, of the high Andean region; *puil*, *Tropæolum tuberosum*, another species, the cultivation of which seems to be restricted to a limited district of western South America. All these plants are more or less under cultivation, but the Indians also eat many wild roots which I had no opportunity to identify. *Kambitš* (*Cyclanthera pedata*), the singularly-shaped fruit of a Cucurbit, is used as a green vegetable along with the tender sprouts of several other plants.

245 262 Among the favorite fruits the plantain naturally ranks first, and is conspicuous around the houses even at an altitude of 1,800 meters. The generic names are *plan*, suggesting the Spanish *plántano* or *plátano*, and *tulú*, a word that forms the root of *Tuluá*, the name of a town in a territory formerly occupied by the Quimbayas. The banana or *guinco*, corrupted into *kuciö*, is probably an imported variety, as are several others rarely met with.

Other fruits are the *papaya*, *paiá*, not mentioned by Castillo, and the name of which indicates a modern acquisition; *Ital*, one of the granadillas (*Passiflora edulis*); *Bakú*, the pineapple, which grows only in the lower region; *úẓtse*, the aguacate (*Persea gratissima*); and also several species of *Inga*, the white pulp around the seeds of which is eaten.

There are two varieties of edible guavas, the one sweet (*Psidium guayaba*), the other sweet sour (*Ps. pomiferum*); and the berries of several *Melastomataceæ*, many of which escaped my observation, are enjoyed by both children and adults.

276 A plant very important in the Indian economy is the coca

[249]

2: Pittier de Fábrega E-4, 5 (1906) 1907
SC15 Paez SC15

(*cl*). It is very little cultivated in Tierra Adentro, however, and the dry leaves are imported from the lower Paez and Tolima basins. To this product the Paez is indebted for his disgusting chewing and spitting habit, the use of which is still doubtful to me. Coca leaves are said to be a powerful reconstituent, allowing the Indians to endure long marches and great privation. But the women do not use it, and however often they may participate in these hardships, it is with the same endurance. At all events the Paez men never cease chewing and spitting. Each of them carries a supply of coca leaves in his *iisa*, and the quicklime or *kuctan* in a small gourd, both hanging at his left side. Now and then he ejects a mouthful of green saliva, making sure that there be a clean whitewashed wall near by, in order thus to decorate it. He then takes a new handful of leaves, sprinkles them with a little *kuctan*, and fills his mouth again, ceasing this everlasting process only long enough to eat, drink, and sleep.

Tobacco is known in Tierra Adentro under the name of *uuci-hi*, but it is never smoked or chewed. The sugar-cane, *uusa*, is cultivated in small patches. The only textile plant observed by me is a short-leaved agave called *sasto* (Span. *magucy*). The larger part of the district inhabited by the Paez is above the region in which grows the bamboo called *guadua*; but this beautiful grass is known to them under the name of *mom*, or *mum*. They transport canes of it from a distance for use in the construction of their lighter bridges; and at Huila, about 1,800 meters above sea-level, there was a small plantation of it, showing a primitive attempt at cultivation.

Several useful plants have been mentioned in connection with dyeing (page 318). Although in the Huila mountains there is at least one species of rubber-yielding *Sapium*, the Indians do not seem to have known of the elastic properties of its gum.

A most striking feature of the upper forest zone of the Palo valley is the wax-palm, *lame* (*Ceroxylon andicola*), which is also for the Indians an important economic plant on account of the wax which they obtain by scraping the lofty trunks (plate IX). This product they use mainly for illuminating purposes. Un-

/284 cont./

132 gives rise to cold local winds that blow through the valley of the Páez, affecting chiefly the areas of Vitoncó, Suin, Chinas, San José, Mosoco, and also the parcialidad /a territorial division/ of Calderas itself. The variation in temperature is noticeable in these zones sometimes having hot days and very cold nights. Nebulosity is almost constant, especially in the northern zones.

241 Economy.--The topographic and climatic characteristics permit the cultivation of various plants, such as maize, beans, bananas, sugar cane, yuca, arracacha, and gourds in the temperate zones, and in the cold ones potatoes, maize, ullucos, [433] beans, gourds, and cabbage. The produce barely leaves a [439] surplus for trade with the parcialidades and urban centers of [438] Belalcázar, Inzá, and Valencia. The potato crops of Mosoco, Vitoncó, and San José serve for an active trade with the Paez of the western slope of the cordillera, across the Páramo de Moras.

433 Coffee and the production of panela are important lines
245 in the economy of the colonists and also of numerous groups
249 of acculturated natives. The coffee of Tierradentro is con-
177 sidered one of the best in the country, owing to the quality and mildness of the bean.

23 /285/ The raising of livestock flourishes among the civilized
437 groups. For the natives it serves for maintaining a barter trade with their neighbors, the white and mestizo colonists.

311 On the whole, native production is relatively scant,
433 giving rise to times of "hambruna" /ravenous hunger/ when
[731] the summers or winters are rather harsh. The workable land lies in the small plains and valleys of rivers and streams, on the alluvial terraces, and on the plateaus. Comparing the size of Tierradentro with that of its arable land, the latter appears scant, a problem that is aggravated by the increase in population and the habitual burning.

101 Population.--Tierradentro is the country of the Paez,
36 who at the time of the Conquest were settled to the north of

/186 cont./

346 There are four other small rooms, five meters /187/ long
796 by three meters wide. Two of them are independent of each other, with their respective doors opening into the sala; one serves as a kitchen and the other to roast the maize griddle-cakes. At the other end of the house are the two other rooms, connected with each other by one door and with the sala by another. The workers sleep in one, and in the other are the troughs of chicha, the bottles of aguardiente, and the laurel candles.

342 The third type of dwelling, very scarce in Calderas, has
●249 a square floor plan. It has the sala, two kitchens, and the du yate léchukue. Whatever type of dwelling a Paez family may own, they all have as an indispensable accessory the sugar mill,
[262] either inside the house or outside it. Actually, if it is kept in
[273] mind that the basic sustenance of the natives is provided by
[276] maize, cabbage, chicha, and coca, this instrument is indispensable.

342 In addition, each house is supplied with water, taken from
312 springs, streams, or falls, through the extremely skillful construction of ditches which skirt the valleys, hills, and slopes. Their lands have abundant water. They are not familiar with artesian wells.

342 In a way, the enormous salas in the houses of Calderas
177 represent the ramadas which are found among the whites,
249 mestizos, and acculturated Indians of San Andrés; they are built independently of the dwellings, with a sugar mill and an oven to boil down the cane juice and make panela. In this parcialidad, the panela industry is quite well developed. In Calderas it does not exist.

584 Among the Paez, land, marriage, family, and house form
583 a close and indissoluble unit. It lends warmth and meaning to
[183] a number of emotional, sentimental, and sociological complexes. This begins when the pubescent boy feels the need for a partner who will help him in his work and assuage to some extent the rigors of solitude. The love awakened by a dark, shapely maiden impels him to ask her parents for her. "Give my your daughter. I am alone and need help in my work."

4:Bernal Villa--24 E-5 (1952-1953) 1953 SC15 Paez SC15

VII

The Milling, the Chicha and the Chicha-makers

796 249 461 [492] It remains to be said that the fiesta begins with the milling. Although it is common to use a horse to operate the sugar mill, it is more usual at fiesta time to move it with human arms, masculine or feminine. It makes no difference. The two laborers for the milling squat on either side of the sugar mill, and one hands over the cane while the other receives the bagasse, which is piled up at one side to be handed back again; this is done up to 12 times in order to extract as much juice [273] as possible. The millers do their work in silence when they are not drunk; while they do it with diligence, there is relaxation, laughter, shouts, and imprecations when they are under the influence of alcohol.

273 249 796 [415] The juice is gathered in troughs, or less frequently in calabashes and pots; it is heated to near the boiling point and then emptied into the troughs, in which, inasmuch as they are well "cured," fermentation is rapid. The troughs are made of huge tree trunks that reach up to one meter and 50 centimeters in thickness and four or five meters in length. As they are depleted through consumption, they are refilled with fresh [285] cane juice. The troughs are covered with small mats made 273 exclusively for the purpose. On the following day it is bubbly, 796 yellowish, with a pungent, sweetish flavor. It is the beka pes (strong chicha) of the natives, who drink it with relish and delight. Five gourdfuls of this liquor are sufficient to make them 273 drunk. Elsewhere called guarapo, while the Paez call it chicha, 182 it is of great importance in their social life and diet. With its 796 help the religious fiestas gain meaning, the mingas are carried [262] out, baptisms and weddings are made more pleasant, and visitors are entertained.

273 Work without chicha is inconceivable, and while they work 46/ they get no food whatever; they merely drink chicha and chew 262 276

/195 cont./

262 coca. Chicha thus provides the calories for work, while coca
273 dulls the feeling of hunger. The consumption of chicha is
461 general among men and women, old people and children.
[276] There is no household without chicha for any length of time.
And during the short lapses when it runs low, they buy it or
[431] visit the households that have some. Among friends it is not
sold, but given as regalement: /196/ "talking, laughing, regaling," as the Indians accurately describe the situation.

249 Milling for the fiestas takes place daily and is in direct
273 proportion to the number of visitors. Milling for the mingas
461 lasts two days, one week for baptisms, and up to a month for weddings.

273 The largest containers for chicha are the troughs, but use
415 is also made of pitchers and large earthenware pots buried in the ground up to their rims.

273 The chicha-makers are the absolute masters of the troughs
463 while they are fulfilling their function. They distribute the
796 chicha, and even the fiestero himself must ask them for the amount desired. No one takes chicha without their consent. Furthermore, they accept the gifts which the visitors give to the fiestero. The latter merely voices his thanks. Although they keep taking chicha, they do not get drunk, so as to perform their task properly. They will have their day when they can do so.

VIII

Sugar-cane Aguardiente

273 At fiesta time, aguardiente is distilled every two or three
[796] days. The distillation is quite easy. The still is prepared in the following way:

[415] A good-sized earthenware pot, 50 to 60 centimeters high and 25 to 30 centimeters in diameter, is filled with guarapo

/298 cont./

241 in some cases, fruit trees, and after this, wheat. In San Andrés,
134 especially in the vegas, maize, plantains, frijoles, arracacha, manioc, sugar cane, and coffee are planted. Thus, there is not proper utilization of the soil or protection of it, aside from the several years of rest. They are not familiar with fertilizers, the rotation of crops, or irrigation systems.

241 It is interesting to note that the families of San Andrés,
423 Calderas, Lame, and Mosoco generally have lands in the low places along the rivers and streams and in the high places where arboreal vegetation abounds, which they call the "montaña." In this way, they can cultivate cold and temperate zone plants (Calderas, San Andrés, Lame) or take advantage of the annual seasonal cycle in the high parts of the Cordillera (Mosoco).

244 A principal dwelling is erected on one of the fincas, while
342 on the others ranchos where the families live during the months of harvest are built. It is at the principal dwelling where the garden is made with plantains, sugar cane, onions, coriander, coca, cabbage (San Andrés, Santa Rosa, Calderas, Togoima), or with cabbage, garlic, onions, yuca de pipchao /yams/, peaches, and apples (Lame, Mosoco, Vitoncó). Peppers are cultivated in the gardens. This principal dwelling forms what in our culture is called hogar /hearth, home/. It is here that the fire is always maintained, that the ears of maize, bundles of wheat, bags of frijoles, tools, troughs, cooking utensils, and sugar mills are kept, where the chickens, guinea pigs, pigs, and turkeys live.

● 249 Industrial crops practically do not exist. There are no
[248] tobacco or cotton plantations. Sugar-cane plantings are not
[273] extensive among the natives. They are used solely for pro-
[778] ducing guarapo, which has almost completely replaced the maize chicha. Only the whites and a few mestizos have extensive sugar-cane fields for producing panela.

248 Figue thrives in Tierradentro. But it is in Vitoncó and Lame that there are numerous plantings of cabuya of very good quality in terms of the size and quantity of the fiber, planted on the boundaries of the properties. This wealth is not utilized as much as it should be. The natives merely make pouches and lassos for internal consumption.

P 245 /298 cont./ Guadua bamboo thrives in the temperate valleys. It is of excellent quality. In most cases it serves as shade for the coffee. Its increase would redound in obvious benefits.

P ●249 C [249] [656] /299/ In spite of the fact that plantings of coca are proscribed by Colombian law, it is cultivated for consumption at almost every home; and in some parcialidades there are numerous plantings for commercial purposes. The value of the leaf is P [435] high. A pound is quoted at three pesos.

Pc 313 Pc [785] Sawmills are found in Coscuro, Toez, the Símbola River, and the Salado stream. But this is almost exclusively an industry of the "whites." Only in San Andrés and Mosoco was it possible to see native sawyers. There is no reforestation.

P 241 172 137 In a large part of the parcialidades of San Andrés, Calderas, Lame, Mosoco, and Vitoncó, and the entire valley of the Páez River, the clearings seem to have been done in quite remote times. There are no forests, but remnants are found along the crests and ridges that separate the valleys and in the windings where the human foot does not venture to tread. The cliffs are covered with uniform savanna vegetation.

P 172 241 P [783] In many parcialidades there are archeological remains belonging to an unknown civilization earlier than that of the Páez. The lands where these elements are found are utilized without any qualms. But when the plantings are in a "new clearing," the natives take the precaution of performing the required purifications before beginning to consume the crops, in order to avoid the "Pijao" plague which might happen if the crops had been in contact with the archeological remains, "pijaos" in the expression of the natives.

P 245 The cultivation of fruit trees is not very widespread, in spite of the fact that up to not very long ago Inzá enjoyed the reputation of being the producer of peaches and apples of very good quality. Nowadays they are cultivated for commercial purposes in Vitoncó, La Troja, and El Cabuyo, where true orchards of these trees are maintained with care. The fruits are splendid and are harvested during the first three months of the

/310 cont./

243 As may be noted, the magical practices of the té eu are
756 absent, although there still exists that of the eating, which in
789 other parcialidades complements his practices.

249 The cultivation of sugar cane is quite widespread in the
273 temperate thermal level, although the plantings are not extensive and are not pursued for commercial purposes; they serve only for obtaining guarapo (fermented cane juice) for individual and collective labor and for social affairs. Guarapo is an essential part of the domestic economy, in the same manner
249 as coca. It is not produced for public pay. Each house has its
257 sugar mill, either outside or in its interior, but there are no ovens or other accessories for producing panela. The latter industry belongs exclusively to the white or mestizo people.

249 The cultivation of the cane requires three weedings before the first cutting. Three cuttings with good results are generally obtained from each planting.

245 The cultivation of coffee is also very widespread. Its expansion is of recent date, but it already has strong and universal acceptance, like cane and plantains. The method of cultivation suffers from certain deficiencies: the shade is insufficient and inadequate; there is no pruning; the care is not very satis-
[433] factory; many do not have pulping machines. The coffee
245 plantings produce several arrobas per year. The monetary in-
434 come of the natives in the temperate zone is provided basically by
[439] coffee. They sell it to steady and familiar customers for prices
[452] that are usually low. The coffee plantings secure credit for the natives; they often collect money or merchandise against a future
245 harvest. Coffee has permitted them /311/ to acquire dishes, to
434 modify their clothing, to enrich their agricultural equipment,
177 *to buy every once in a while the drugs* of the "whites." At harvest time they eat meat regularly, and they are also able to pay wages for the improvement of their fincas. But, above all,
[273] it opens the doors of the liquor stores to them. They consume considerable amounts of alcoholic beverages. They have not yet learned to make good use of their monetary income.

SAN ANDRES

244
249
433
439
563

Fams.	Sugar Cane				Arracacha			
	A	C	V	%	A	C	V	%
1.*	500	...	500	100,0	40	20	20	50,0
2.	...	...	...	.....	20	12	8	40,0
3.	...	...	...	.....	4	4	...	.....
4.	(7)	...	...	.....	...	...	...	.....
5.	20	...	20	100,0	4	4	...	.....
6.	(7)	...	...	.....	25(3)	...	...	.....
7.	(7)	...	...	.....	17	17	1	.....
8.	(7)	...	...	.....	15(3)	...	...	.....
9.	(7)	...	...	.....	20	20	10	50,0
10.*	(7)	...	...	.....	...	...	...	.....
11.	40	...	40	100,0	20	10	10	50,0
12.	(7)	...	...	.....	18	9	9	50,0
13.	...	...	...	.....	...	...	...	.....
14.*	(7)	...	...	.....	...	...	...	.....
15.*	100	...	100	100,0	...	...	...	.....

/A = arrobas produced; C = arrobas consumed; V = arrobas sold; % = percentage sold. The commas in the figures should be read as points in the translation to English.

3. Personal estimate of the author.

7. Owns plantings of sugar cane.

244
249
433
439
563

Fams.	Coca				Frijoles			
	A	C	V	%	A	C	V	%
1.*	4	4	...	.....	...	...	...	.....
2.	...	...	...	.....	5	4	1	20,0
3.	...	...	...	.....	...	...	...	.....
4.	...	...	...	.....	3	3	...	.....
5.	...	...	...	(8)	1	1	...	.....
6.	...	...	...	(8)	3	3	...	.....
7.	...	...	...	(8)	1	1	...	.....
8.	...	...	...	(8)	8	8	...	.....
9.	...	...	...	(8)	20	10	10	50,0
10.*	...	...	...	(8)	...	...	...	.....
11.	...	...	...	(8)	...	...	...	.....
12.	...	...	...	.....	3	3	...	.....
13.	6	2	4	66,6	5	1	4	80,0
14.*	...	...	...	.....	...	...	...	.....
15.*	...	...	...	.....	...	...	...	.....

/A = arrobas produced; C = arrobas consumed; V = arrobas sold; % = percentage sold. The commas in the figures should be read as points in the translation to English./

8. Owns plantings of coca.

241
433

From the above table we can make the following deductions:

[245] 1. The coffee production is wholly intended for sale.
[434] It thus constitutes the principal source of monetary income
[439] for the natives and, of course, for the "whites."

2. Maize, frijoles, sugar cane, and coca are intended almost exclusively for internal consumption. The production of panela indicated in the table refers to the whites and mestizos.

[262] 3. The food base of San Andrés is provided by maize,
[276] plantains, manioc, and arracacha. At the time of the coffee
[273] harvest, meat is consumed. Coca and guarapo indispensably complement this dietary regimen.

/321 cont./

231 [796] [533] The slaughtering of the head of cattle for consumption at religious fiestas is accompanied by music (1).

1. Bernal Villa, S. "La Fiesta de San Juan en Calderas, Tierradentro /The Fiesta of San Juan in Calderas, Tierradentro/," p. 208.

[232] Of the equine livestock, they also prefer the females for 492 reproduction. Horses are used for the milling of sugar cane, for 484 the transport of loads, for long journeys. Many own saddles, [249] /322/ although generally deteriorated ones. Women never ride [482] on horseback. On long journeys the woman walks with a heavy [562] load on her back, while the man rides without carrying anything to hinder him.

231 The horses of the Páez are small, but very hardy and suitable for the rugged and difficult roads. They do not own mules or [754] donkeys. In Calderas it is said that someone brought a donkey [789] for the purpose of producing young mules, but the envious ones (sorcerers) cast a spell on it and killed it. Nor do they own goats, which they regard as very thievish and destructive.

In the houses they raise guinea pigs, chickens, and turkeys, and, on a smaller scale, ducks. Furthermore, dogs, [422] cats, and hogs are also raised. The former belong indifferently to men or women, while hogs and dogs are the exclusive property of the men.

The scant care given to domestic animals is worthy of note. There are no corrals of any sort, nor special caretakers [233] for the animals. Cattle are commonly left to fend for themselves in the pastures, and only every 15 days, or, more frequently, once a month, are they rounded up by their respective owners to [232] check on their existence or multiplication. They know about the need to give salt to cattle, but this article is supplied in small quantities and at very long intervals. Most of the animals of Calderas go to a small spring of brackish water in Tumbichukue. Among the other domestic animals, only the chickens, turkeys, and guinea pigs are fed regularly with grass, maize, manioc, and

/343/

241
433 Thus, a native family of Mosoco and Lame, in their respective order, has for its subsistence throughout the year 18 and 36 arrobas of maize, 16 and 5 arrobas of wheat, 2.5 and 2.5 arrobas of broad beans, 3 and 0 arrobas of garlic, 8 and 4 arrobas of ullucos, 5 and 4 arrobas of nasturtium tubers, 1.5 and 4.5 arrobas of frijoles, and 149 and 11 arrobas of potatoes. A native family of San Andrés has 7 arrobas of coffee, 124 bunches of plantains, 21.5 arrobas of maize, 59 arrobas of manioc, 13
●[249] arrobas of arracacha, and 4 arrobas of frijoles. Unfortunately it is impossible to obtain statistics on the production of coca and, above all, on the amount of sugar cane consumed in the form of guarapo, which makes it impossible for us to find out in what ways and in what amounts it complements the consumption of each family.

As for maize, we see that the amounts for the families of San Andrés and Lame are superior to those for the families of Mosoco. Those for Lame are exactly double. But while in the latter, aside from coffee, there is no species produced for sale, in Mosoco, on the other hand, there are wheat, garlic, and potatoes for such a purpose. From which we deduce that the smaller the number of crops intended for trade that there is in a parcialidad, the larger will be the production of species for internal consumption, above all those that can be preserved for long periods of time, such as maize, frijoles, and broad beans. Ullucos, potatoes, and, above all, nasturtium tubers demand almost immediate consumption. The same is true of plantains, manioc, and arracacha. This is the reason why the families of San Andrés and Lame have at their disposal larger quantities of maize and frijoles than those of Mosoco.

Division of activities according to sex

462 From the earliest age, differences are established in the technological, economic, and everyday activities.

Among the Páez, only the man can make palm hats for the woman and for himself, wield the machete with full skill and dexterity, fashion the trough, sugar mill and the plates for eating, and play the musical instruments. On the other hand, only the

[San Andrés]

/345 cont./

427 San Andrés is the sole region of Tierradentro, as far as we
161 know, where tenant farmers are found. Although the number of persons sunk in this servitude is no higher than 100, the mere occurrence of this phenomenon already tells us of an excess of population, at least in the parcialidades of San Andrés and Santa
[131] Rosa, from which the tenant farmers came. On the other hand, the scattering of the Páez group through this very department of Cauca, the departments of Huila and Tolima, and even through
[311] the department of the Valle is well known. The colonization of the uncultivated lands in Tierradentro by the natives has been systematic and intensive during recent years. There is the utilization of ever more inaccessible lands for agriculture in the temperate thermal level. All of these are factors that clearly tell us of an excess in the Páez population.

427 Here is what a tenant farmer told us about the phenomenon
241 of tenant farming: As a tenant farmer he has the right to own a
466 house, a garden, and a clearing. The house and garden are contiguous and complementary. His garden occupies one plaza /a Colombian measure with 80 meters to the side/ more or less, and in it he has planted plantains (about 200 trees), oranges (about five trees), onions, arracacha, manioc, sugar cane, sweet potatoes, and some 200 coca trees. He has surrounded the garden with barbed wire provided by the owner in order to avoid damage by the animals of the hacienda. He can lay out his clearing on any site of the hacienda. It changes every year. In his present clearing he has planted 1,500 manioc plants; 200 of arracacha (he could not find more seed); maize; small frijoles /frijol chiquito/ (in one month he hills the "sprigs," in two months they flower, and in three months he harvests) and large frijoles /frijol grande/, and, finally, about two loads of sugar-
[433] cane shoots (seed). The produce of the clearing and of the garden is primarily for consumption, but if there is a surplus he may sell it to anyone, even though the owner urges him not
[249] to sell to anyone but himself. The sugar cane is milled in the
[257] /346/ sugar mill of the owner, with the subsequent use of his implements to make panela, half of what is produced being given to him.

/350 cont./

252 Cabbages are cultivated in the gardens and are almost never
262 lacking throughout the year; they are eaten daily, chopped into
244 the dish of the day. At religious fiestas it is customary to cook
[796] the cabbages "on the bough," that is to say, with their respective stalks, and serve them as a special dish. White cabbage is seldom cultivated and thus its consumption is almost null. The few heads grown in the cold part of San Andrés are intended for sale.

252 Plantains are eaten preferably in sancocho, and their con-
262 sumption is intensive in the temperate climate. They are also eaten roasted, in which case they are preferred with meat or entrails. Potatoes, especially in Mosoco, are eaten with gravy, a favorite dish for entertaining "white" or civilized visitors. This dish is prepared with water, milk, eggs, onions, and meat. The potatoes are peeled and washed well. In Calderas they are also eaten in this fashion, but frijoles are added to them as well.

In general wheat is cultivated to be milled and sold. Sometimes it is eaten in griddlecakes, in which case the dough is prepared with water and panela. They also make soup with wheat flour, without removing the bran, with cabbages, frijoles, and salt.

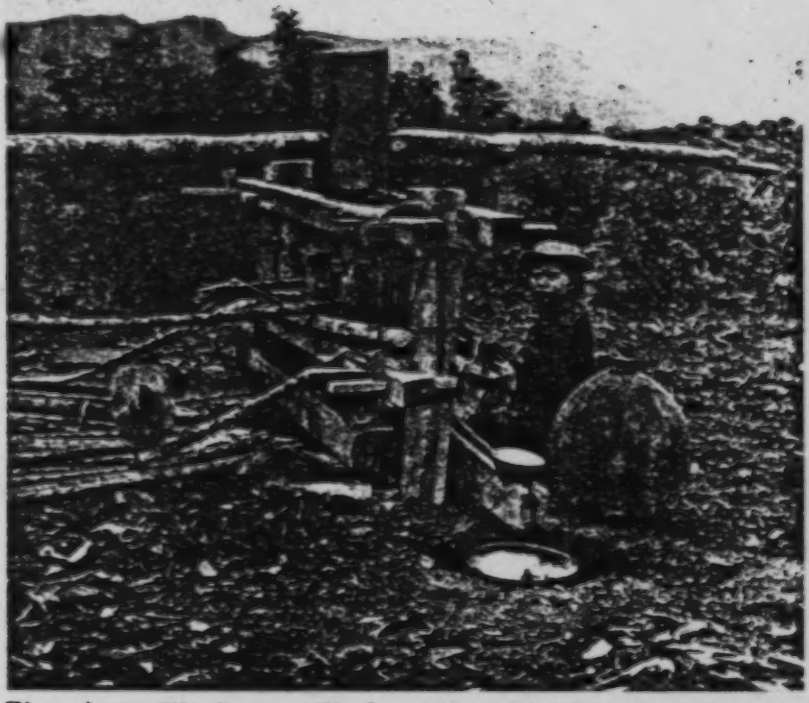
Sweet potatoes are consumed in small quantities. They are washed, cooked, and eaten without salt and with peppers. They prepare peppers by cooking them in a pot (a bag, said the informant) and adding onions, coriander, and salt. This condiment thickens and keeps for about a month.

Chachafruto is cooked with frijoles or in the soup, but it is also eaten by itself and skinned. It is very tasty.

273 /351/ Sugar cane serves solely for extracting the juice and
● [249] fermenting it. With the guarapo, thirst is quenched, mingas are held, "courtesies" are shown, religious fiestas and social life in general are carried on. From cane juice, duly fermented, alcoholic beverages are also extracted. They make chicha from maize, but this is not prevalent.

6: Bernal Villa--103 E-5 (1952-1953) 1954 SC15 Paez SC15

407
249
415



Tierradentro IX: Sugar mill of wood and the milling (Togoima).

7:Hernández de Alba E-5,Y(no date) 1948 SC15 Paez SC15
Moguex

342
[177] Some had wooden doors and windows, and were built with nails and wires, though most were still made with vegetable materials.

The modern *Moguex* house has two rooms. The main one, entered through a small door, serves as storeroom for goods to be sold, reception hall, dancing place, and a room in which to keep watch over the dead. The other is a pantry for provisions and drinks; here are kept
[354] kitchen utensils. In the center is the fireplace and around it dried
352 cowhides or platform beds made of horizontal poles tied to stakes
476 driven in the ground. One's neighbors aid him to build his house,
461 transporting heavy timbers over light rollers and singing rhythmi-
554 cally as they heave together. If the owner of a new house is a man of
778 means, he pays for a feast of benediction or consecration carried out with a Catholic priest, a godfather, and a godmother.

The *Páez* does all this and in addition puts some pieces of silver
352 money under his house to assure his good fortune. In the main house
415 he places the metate on stakes, and in a secondary house, the press
353 for extracting wax from laurel, one or more troughs or hollowed trunks,
354 and large jars for chicha and guarapo. From the roof frame hang bags,
529 or "mochilas," of netted hemp for belongings. There is also a bam-
283 boo candlestick, the wooden feast drum, sometimes a tiple or small guitar, and, nailed to the wall, a spindle. Outside, the loom stands
404 against the wall Beyond it is the sugarcane mill, which is made of
286 a section of tree trunk with a hole above a projection on which the
249 cane is pressed by hand with a rod which crosses the hole. Some mills consist of two or three wooden cylinders rotated by animal power.

243 In each maize field is a small, temporary house and a high platform
342 where a watchman frightens the parrots and parakeets with periodic cries and motions.

177 Each *Páez* group today has its communally built pueblo, with
361 "bahareque" buildings grouped around a rectangular plaza: a church, with its arched portico and small tower in imitation of Colonial architecture, a house for the priest, a school, and two or three large houses for meetings and fiestas, where they dance, sing, and sleep during fiesta days. But ordinarily, the people remain at their distant houses and fields, and do not live at the pueblo, the only permanent inhabitants of which are a few Whites and Mestizos.

ENGINEERING WORKS

491 The Spaniards found bridges which they described as "weak and
499 flexible bridges of bamboo" and "bridges of vines." A territory so broken and crossed with so many rivers and canyons naturally stimulated the *Páez* in the construction of bridges and the laying out of roads. Today they make four kinds of bridges: (1) A simple vine or cable stretched across the river; (2) a kind of wooden stairs placed

Hernández de Alba E-8,1 (no date) 1946 · SC15 Paez SC15
Moguex

with the right hand over the naked thigh. Two strands are similarly twisted together until the desired thickness is obtained.

Gourds.—Gourds are still widely used. They are picked when ripe, cleaned out, and dried. With small openings, they serve as containers for beverages and powdered lime. Some are made into bowls and others are cut up to make spoons. Today these objects are undecorated, but formerly in Tímaná they were painted with a resin varnish very similar to that used in Pasto. (See p. 930.) Before the Spanish domination, gourds were also used as frames over which were stretched the prepared skin of the heads of their enemies killed in war.

Metallurgy.—The metallurgy of these Indians was the same as that practiced throughout most of Colombia. The metals were gold, copper, and an alloy of the two (tumbaga). It is recorded that the Indians "worked gold," but the processes are not described. Specimens found recently in the territory, however, show molding, casting, and hammering. Metal objects included nose ornaments, parrot-shaped breastplates, necklaces with small animal figures, and some anthropomorphic idols. Gold occurs in this territory, particularly on the upper Páez or the Suin River.

Ceramics.—These tribes made and still make coiled pottery. Modern vessel forms include large jars for storing beverages and poorly shaped, crudely decorated containers for preparing and serving food. There is no individual specialization in this task, women making pots for their own family and not for trade.

Stone and wooden artifacts.—The native Indians made stone axes of a simple design, but stonework disappeared during the time of colonization, when the Indians could obtain manufactured iron weapons and utensils such as machetes, axes, hoes, shovels, etc. The manufacture of wooden objects—weaving, cooking, and farming implements and weapons—was furthered by the use of metal tools, and now is well developed, as exemplified by the trapiche (cane mill), a true machine made of wood.

Weaving.—Weaving, little practiced before the Conquest, developed with the post-Contact need for wearing more clothes and with the introduction of sheep, whose wool was used in addition to cotton. Weaving was and is exclusively the work of women (pl. 186). They prepare fine, uniform yarn with a common spindle, which they handle as they walk along the road (pl. 187, *top*). The loom is vertical, made of two horizontal rods fastened to two uprights. The warp runs vertically with a continuous thread. The horizontal weft is pressed down with a wooden sword. They also weave hemp bands on the loom. Woolen blankets are woven in natural colors, but some sashes have bright colors made of imported wool or of home-dyed wool. For red, they use one of the Rubiaceae (*Relbunium hypocarpium*), and for